Baton Rouge Community College

Academic Affairs Master Syllabus

Date Approved or Revised: July 23, 2008

Course Name: General Physics I
Course Number: PHYS 201

Lecture Hrs. 3 **Lab Hrs. 0** **Credit Hrs. 3**

Course Description: Introduces, in this non-calculus based physics course, the basic concepts and principles of mechanics, heat, and sound. Appropriate for students studying biology, pre-medicine, architecture, technology, earth, and environmental disciplines and other disciplines.

Prerequisites: MATH 111 or MATH 120 or equivalent
Co-requisites: None, PHYS 210 L is strongly recommended

Suggested Enrollment Cap: 30

Learning Outcomes: Upon successful completion of this course, the student will be able to:

- Demonstrate an understanding of basic physics principles of mechanics, heat, sound, and explain simple phenomena using these principles;
- Explain and apply basic physics principles to everyday life; and
- Solve scientific problems through synthesis and analysis, particularly the application of algebra and trigonometry.

General Education Learning Outcomes: This course supports the development of competency in the following areas. Students will:

- Think critically, collect evidence (statistics, examples, testimony) and make decisions based on the evidence, comprehend and analyze texts, and solve problems using methods of critical and scientific inquiry;
- Communicate effectively using standard written English;
- Organize, analyze, and develop useful information useful by employing mathematical principles;
- Relate the general concepts of science to the world and demonstrate an understanding of the impact of these processes and their concepts on human lives;

Assessment Measures: Instructors may use a variety of assessment measures to assess student performance. But, the following assessments will be used in all sections:

- Individual instructor-designed exams will collectively assess all learning outcomes and will be administered during the semester as listed in the course syllabus;
- Individual instructor-designed comprehensive final exam, adhering to a department-determined content, will assess all learning outcomes; and

- Individual instructor-designed or collaborative instructor-designed assignments will be given as a portion of the total grade and will include homework, quizzes, and individual and collaborative group assignments and projects; all assignments will be graded using an instructor-designed rubric.

Information to be included on the Instructors' Course Syllabi:

- ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.

- ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor's and/or the department's policy for make-up work. For example in a speech course, "Speeches not given on due date will receive no grade higher than a sixty" or "Make-up work will not be accepted after the last day of class."

- ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.

- ***General Policies*:** Instructors' policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.

- ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.

- ***Safety Concerns:*** In some programs this may be a major issue. For example, "No student will be allowed in the safety lab without safety glasses." General statements such as, "Items that may be harmful to one's self or others should not be brought to class."

- ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

Expanded Course Outline:

I. Measurement
   A. Standard and SI Systems
   B. Uncertainty in measurements and significant digits

II. Kinematics
   A. Kinematics in one dimensions
   B. Vector algebra and kinematics in two or three dimensions

III. Force and Acceleration

A. Dynamics
B. Centripetal force, Center of Mass, Universal gravitation

IV. Work, Energy and Momentum
A. Work, power and energy conservation
B. Impulse and linear momentum
C. Rotational kinematcs and rotational dynamics
D. Conditions for static equilibrium and center of gravity

V. Fluid Mechanics
A. Properties of Fluids
B. Pascal's, Archimede's and Bernoulli's Principles

VI. Thermodynamics
A. Temperature and heat
B. Thermal Expansion and transfer of thermal energy

VII. Sound and Electromagnetic Radiation
A. Simple Harmonic motion
B. Wave Characteristics
C. Intensity, sources and propagation of sound